

Title (en)
Magnetic shape memory alloy material

Title (de)
Magnetisches Formgedächtnislegierungsmaterial

Title (fr)
Matériau d'alliage de mémoire de forme magnétique

Publication
EP 2339595 A1 20110629 (DE)

Application
EP 09015426 A 20091214

Priority
EP 09015426 A 20091214

Abstract (en)
Magnetic shape memory alloy material with a Curie temperature and a phase transition temperature of a martensitic to an austenitic phase comprising nickel, manganese, gallium and cobalt in a composition, is claimed. Magnetic shape memory alloy material with a Curie temperature and a phase transition temperature of a martensitic to an austenitic phase comprising nickel, manganese, gallium and cobalt in a composition of formula (Ni aMn bGa cCo dFe eCu f) (I), is claimed, where: the values of a-f are given in atom%; the value of d is adjusted so that the Curie temperature and the phase transition temperature is greater than 65[deg] C; and a molded body was heat treated for chemical homogenization at a temperature greater than 700[deg] C. a : 44-51; b : 19-30; c : 18-24; d : 0.1-15; and e, f : 0-14.9, preferably 0, where d+e+f is = 15, preferably 0.5-3 and a+b+c+d+e+f is 100, and either e is greater than 0 and f is equal to 0, or e is equal to 0 and f is greater than 0, or e+f is = 3 with d+e+f = 6. An independent claim is included for a shape memory element made from the material for use as an actuator element in an actuator and/or as a sensor element in a sensor.

Abstract (de)
Die Erfindung betrifft ein magnetisches Formgedächtnislegierungsmaterial mit einer Curietemperatur (TC) sowie einer Phasenübergangstemperatur (TA) von einer martensitischen in eine austenitische Phase, aufweisend Ni, Mn, Ga sowie mindestens Co in der Zusammensetzung Ni a Mn b Ga c Co d Fe e Cu f, wobei a, b, c, d, e und f in Atom-% angegeben sind und die Bedingungen #####44 # a # 51; #####19 # b # 30; #####18 # c # 24; #####0.1 # d # 15; #####0 # e # 14,9; #####0 # f # 14,9; #####d+e+f # 15; #####a+b+c+d+e+f = 100; erfüllen.

IPC 8 full level
H01F 1/03 (2006.01); **C22C 19/00** (2006.01); **C22C 19/05** (2006.01); **H10N 35/85** (2023.01)

CPC (source: EP)
C22C 19/03 (2013.01); **C22C 19/058** (2013.01); **H01F 1/0308** (2013.01); **H10N 35/85** (2023.02)

Citation (search report)
• [XA] JP 2002285269 A 20021003 - DAIDO STEEL CO LTD
• [A] US 6475261 B1 20021105 - MATSUMOTO MINORU [JP], et al
• [A] WO 2009147135 A1 20091210 - LEIBNIZ INST FUER FESTKOERPER [DE], et al

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Designated contracting state (EPC)
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